



## Prospective Study

# A cross sectional study of alcohol consumption and risk factors

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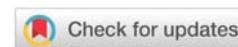
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## Abstract

**Introduction :** Alcohol consumption is an important contributor to the global burden of different disease such as stroke, sleep apnea, pancreatitis, diabetes mellitus, CAD and so on. Urban populations are having greater risk of getting the alcohol induced disease.

**Objective:** A cross sectional study of alcohol consumption associated with risk of different disease. To inspect the correlation between alcohol intake and risk on different disease in men and women based on their age group and which leads to other diseased condition.

**Methods:** A descriptive cross sectional survey was conducted involving 100 adults at 18 years of age or above who were recruited with cluster random sampling. Demographic data and risk factors were determined by taking history, physical examination and laboratory test.

**Result:** Studies shows that alcohol consumption increases the risk factor for those diseased condition i.e., it increases the risk on stroke, hypertension, coronary artery disease, Type 2 diabetes, life style. Results from our quantitative meta analysis showed that drinkers with average intake of less than 30 g/day and no episodic heavy drinking had a lowest risk on above complication.

**Discussion:** Comparing to the present study with the former research the prevalence of a number of risk factors can be seen in the present research. We found out different statistical pattern.

**Conclusion:** These findings indicate that alcohol consumption from mild to moderate intake is a risk factor for different diseases.

## Introduction

Alcohol consumption is an important contributor to the global burden of disease, responsible for 4% of disability-adjusted life years [1,2]. While disease burden is somewhat lower in low income geographic regions where abstinence is common, there is concern that urbanization is associated with increased alcohol use [3–5].

OSA is thought to be more common among people who consume alcohol, possibly because alcohol increases upper airway collapsibility [6–8] and also because alcohol intake can contribute to a higher body mass index. However, evidence on the effect of alcohol consumption on the risk of OSA remains mixed, with some studies reporting an increased risk in those who consume alcohol [9–11].

It is becoming increasingly clear that alcohol consumption is a factor of importance for the risk of type 2 diabetes. Data from epidemiological studies suggest a protective effect of moderate alcohol consumption [12].

In addition, long-term heavy alcohol consumption can have toxic effects on the heart and cause cardiomyopathy and, consequently, increase the risk of HF. In contrast, low to moderate consumption of alcohol can have an overall cardiovascular benefit and may reduce HF risk [13]. Because of the risks associated with high alcohol intake, clinical guidelines generally do not recommend alcohol consumption; rather, they suggest that other lifestyle features be emphasized. For example, a recent review of alcohol and CHD stated, “We have other means of lowering cardiovascular risk that are safe and proven [14].

Diverse risk factors, such as sugar-sweetened beverages, smoking and coffee consumption, have been investigated to be associated with the incidence of type 2 diabetes. A number of recent prospective studies have also attracted attention to the role of alcohol consumption in the development of type 2 diabetes [15,16]. How alcohol consumption affects the risks of health conditions has been well characterized. At lower levels of consumption, studies suggest alcohol consumption is associated with both increased health risks for some conditions (e.g. cancers, liver cirrhosis) and decreased for others (e.g. ischemic heart disease, ischemic stroke). It also clear that patterns of drinking, as well as volume, play an important role in both the disease burden and health benefits associated with drinking [17].

We have previously shown that moderate alcohol consumption lowers the risk of incident type 2 diabetes [18]. However, since alcohol consumption has been associated with increased triglycerides [19], body weight [20], and blood pressure [21,22] it may have adverse consequences for individuals with diabetes. In this systematic review we examined the relationship between alcohol consumption and long-term complications of type 2 diabetes. Consequently, alcohol consumption and raised blood pressure are among the top five risk factors responsible for the growing global non-communicable diseases (NCD) burden [23]. It is well accepted that heavy alcohol consumption has been linked to an increased risk of ischemic stroke [24] and hemorrhagic stroke [25,26]. However, some studies of moderate alcohol and stroke reported a protective effect of alcohol at these doses [27-29] while others have found that moderate consumption increases the overall risk [30].

The most common cardiac arrhythmia, is accompanied with a 4- to 5-fold increased risk for stroke, tripling of the risk for heart failure, doubling of the risk for dementia, and 40% to 90% increase in the risk for all-cause mortality [31]. High alcohol consumption also has been associated with an increased AF risk. However, few studies have detected an association between light to moderate alcohol drinking and AF [32-35]. Recently, it has been hypothesized that not only episodic but also habitual heavy alcohol consumption is associated with the risk of AF [36].

Perhaps because acute alcohol intoxication increases the risk of aspiration and pulmonary infection, while chronic alcohol ingestion disturbs both immunologic and non immunologic host defense mechanisms within the airway, resulting in alveolar macrophage immune dysregulation and alveolar epithelial barrier dysfunction [37]. Alcohol consumption is considered one of the major causative agents for pancreatitis ; after gallstones, alcohol is the second major leading cause of AP and the most common cause of CP [38].

## Methods

### Study selection

We identified potentially relevant articles regardless of language by a computerized search of the Pub Med

database from inception . We used the search terms ‘alcohol consumption’, ‘alcohol drinking’, or ‘alcohol intake’ combined with ‘complications’ and ‘prospective study’. The reference lists of pertinent articles were reviewed to identify additional studies. Eligibility criteria for inclusion in the present study were: (i) The study was prospective (ii) The exposure was alcohol consumption; (iii) The outcome on complications on alcohol incidence (hospitalization) and/or mortality; (iv) The population was free from complications of alcoholism.

### Type of participants

All studies of adults aged 18 years and over were eligible for inclusion in this review.

### Type of exposure

We included all studies that had assessed alcohol consumption , either by self-report or a proxy such as clinical records, defined either as drinking level (low, moderate, heavy, alcohol abuse, alcoholism) or as frequency (grams per day).

### Study design

All the primary comparative observational studies were included (longitudinal/cohort, case control, cross sectional).

### Inclusion and exclusion criteria

To be included in our meta-analysis, a published study had to meet the following criteria: (1) had to be an original research study (not a review); (2) cohort or case control study in which medically confirmed on complication on alcohol (i.e., not self reported endpoint); (3) reporting data on alcohol consumption and complications (4) having three or more alcohol drinking exposure groups

### Data extraction

All data were independently abstracted by means of a standardized protocol. Study characteristics recorded were as follows: title, lead author name, year, and source of publication, country of origin, study design (cohort study or case-control study), characteristics of the study population (sample size; sampling methods; and distribution of age, average age at baseline, sex, and ethnicity) measures of outcome and exposure (the number of cases at each exposure level, the total population at risk at each exposure level), duration of follow-up (for prospective cohort studies).

### Standardization of alcohol consumption

Where consumption was reported in drinks and not grams, the gram pure alcohol equivalent described in the article was used as a conversion factor if stated, and if not, conversion from standard drinks was based on geography. For all other countries without clear standard drink specifications 12 grams pure alcohol was used. For those studies that did not report measures of association separately by sex, the estimates were used for men as well as women. Information on alcohol consumption was extracted. When ranges of alcohol consumption were given, the midpoint was taken. In cases

where no upper bound for the highest category was given, 3/4 of the length of the immediate previous category range was added to the lower bound and was used as the measure.

### Statistical analysis

The data were collected and arranged at excel sheet of Microsoft excel version 13. Descriptive analysis was used to process the outcomes in tables and graphs.

### Result

Alcohol consumption is one of the major cause for death. It also causes many other diseased condition which leads to death. Both men and women are almost equal in intake of alcohol at the period of 18 to 24 years of age. So the risk for the diseased condition are common for both. Women's are taking more alcohol than men so the risk will be more among them.

Alcoholism among the age group and time period is an important factor in influencing complication to diseased condition. It can be clearly understand from Tables 1,2 which shows percentage duration of drink and age group.

Risk factor for the alcoholism increases the diseased condition. It mainly includes hypertension, DM, CAD, Dyslipidemia, sleep apnea and so on. Table 3 shows the risk factors for the diseased condition.

**Table 1:** Percentage use of drinks among men and women.

Type of drink	Men (%)	Women (%)
All alcoholic drinks	22.6	13.9
Wine	1.2	3.4
Normal beer	12.0	2.2
Strong beer	1.9	0.2
Sprit	5.4	5.3
alcopops	1.4	2.0

**Table 2:** Percentage showing duration of drink and age group.

	18-29 years		30-49 years		50-69 years		Above 70 years	
	men	women	men	women	men	women	men	women
24 hours	28%	15%	33%	24%	38%	28%	57%	31%
1 day -1 week	47%	33%	38%	34%	32%	27%	16%	20%
Over 1 week ago	25%	51%	29%	42%	30%	45%	27%	49%

**Table 3:** Percentage of risk factor among men and women.

Risk factor	Men (%)	Women (%)
Currently smoker	45.3%	34.2%
Hypertension	36.34%	28.85%
DM	1.78%	1.21%
CAD	12.1%	7.3%
Total cholesterol	5.4%	9.9%
Obesity	14.5%	13.9%
Sleep apnea	1.3%	0.3%

## Discussion

Alcoholism is the epidemic of our time and set to remain the single most important disease in the world in the terms of mortality, morbidity, disability and economic loss until 2020. Alcoholism has been known by a variety of terms, including alcohol abuse and alcohol dependence. Today, it's referred to as alcohol use disorder. It occurs when you drink so much that your body eventually becomes dependent on or addicted to alcohol. When this happens, alcohol becomes the most important thing in your life. People with alcohol use disorder will continue to drink even when drinking causes negative consequences, like losing a job or destroying relationships with people they love. They may know that their alcohol use negatively affects their lives, but it's often not enough to make them stop drinking. Some people may drink alcohol to the point that it causes problems, but they're not physically dependent on alcohol. This used to be referred to as alcohol abuse. women are common among them. They are more in the field of alcohol use and risk will be more for them. This graphs and tables are obtained from the survey. It will provide the information about the drinking habit.

For primarily prevention purpose individuals with documented risk factors should actively pursue risk factor modifications to reduce the risk of future complication events. Lifestyle modifications with guidance and strong encouragement of the physician- led health care team can make a significant positive impact on future complications rate.

## Conclusion

According to the prevalence of risk factor which 45.3 % of men and 34.2% of women of the study population were currently smokers. 36.34% of men and 28.85% of women of the study population were currently hypertensive patients. 1.78% of men and 1.21 % of women of the study population were currently DM. 5.4% of men and 9.9% of women of the study population were currently dyslipidemic. 14.5% of men and 13.9% of women of the study population were currently obese. The researches strongly recommended all population strategy of primary prevention of alcoholism to be designed and practiced. Managing the burden of risk factors can be prevented the following diseased condition and should assist managing the future conditions.

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